

REMARKS

This amendment replaces the response filed August 28, 2002, not entered. Applicant acknowledges the indication of allowability of claim 20. The claim has now been rewritten in independent form, broadened to not be limited to "non-woven".

Applicant acknowledges the withdrawal of the 35 USC 112 rejection of sections 4-11 of the previous Office action, and notes that the present amendment to claim 87 overcomes the double patenting objection.

Applicant has revised claim 1 and rewritten claims 2 and 87 in independent form. These claims focus upon particularly important features of the invention as applied to important laminates.

Claim 9 has been cancelled. New claims 90-98, patterned after claims 1, 2, 87, 3, 4, 6, 7, 14 and 15 respectively, relate to the hook-engageable material per se, for instance as it may exist alone before being incorporated in a laminate or for use alone (i.e. without a backing substrate) as is disclosed for instance in regard to the self-supporting banner of Figs. 11 and 11A.

Applicant has submitted a Supplemental Information Disclosure Statement to bring to the Examiner's attention a patent describing a light weight printed outer diaper covering that had recently come to its attention.

Applicant submits, as Appendix A, copies of two micro photographs of 66X magnification of the loop side (denoted "face side") and back side (denoted "binder side") of a nonwoven hook-engageable loop material bearing printing. As will be verified by a declaration of one of the inventors, being separately submitted, these photographs show an ultra thin nonwoven of the type employed in important embodiments of the invention. It has been printed on its loop side by dye sublimation. For the purpose of showing the print on the nonwoven, the substrate to which the nonwoven is laminated has been omitted, so that the ultra thin loop material may be seen from back as well as front. The particular material shown was formed generally in accordance with the description of the specification, pages 15-18, employing staple, crimped polyester fibers of 6 denier, 3 inch length, which were first needled as a batt, and subsequently stretched and stabilized as described. The photographs shown were taken at a

transition of black dye print to red dye print resultant from dye sublimation printing on the loop side of the material. Such printing is generally described on page 8, line 2; page 27, line 21; and pages 31-33 of the specification.

The invention of revised claim 1, is a laminate comprised of a substrate and a layer of hook-engageable non-woven material, while claim 90 concerns the material per se (i.e., without being laminated to a substrate). In each case the material has a basis weight of less than about 4 ounces per square yard, the nonwoven being a stretched material, stabilized in its stretched condition in the manner that there are fibers or yarns of hook-engageable loop form on the surface from which hook-engageable fibers or yarns extend (the "second" surface of the claims) along with a distribution of straightened fibers. A graphic design or image print lies at least partially upon the second surface of the non-woven material, the print on the second surface being in the form of flexographic print, dye sublimation print, electrostatic print or ink-jet print, the printing residing on both the fibers or yarns of hook-engageable loop form and on the straightened fibers of the nonwoven, the fibers or yarns of hook-engageable loop form on which said print resides remaining effectively hook-engageable.

For discussion in the specification, see e.g. page 3 lines 9-15; page 8, lines 1-6; and Figure 3B and its related text, pages 15-18.

In Appendix A, with respect to claims 1 and 90, attention is drawn to the very open, flimsy or lacy nature of this hook-engageable loop fabric, reflective of its being of less than 4 ounce weight per square yard, while the fibers are thick enough to serve as hook-engageable loops. The gray background which shows extensively in the photographs is an aluminum sheet on which the fabric resided during photography. On the "face" or loop side of the fabric of Appendix A, ("second surface" per claims 1 and 90) the protruding hook-engageable loops are seen, bearing the sublimation-printed dye. Some of the straightened fibers of the fiber mass, also bearing the printed dye, appear in the background. In the second photograph taken from the "binder" side ("first surface" according to claims 1 and 90), straightened fibers, as a result of the stretching of the claim, are more prominently seen and also clearly bear the sublimation-printed

dye. Especially in a laminate with smooth paper (see claim 17), an inexpensive but fine-appearing dimensionally stable material is possible, capable of serving as decoration or as a visual display, the material also having the capability of being readily engaged by hook fasteners for the important advantages described in the specification.

None of the references of record, alone or in any proper combination, suggests the product of revised claim 1 or new claim 90.

The arguments previously presented by Applicant are resubmitted, with the following addition.

In reference to Paragraph 12 of the office action of June 28, 2002, we request that the Examiner review the arguments we have previously presented in the following light.

The Examiner has said "a patent is not required to disclose [sic] every feasible variation or obvious embodiment". We submit this begs the question, for where has it been shown that the concept of the claims was "obvious"?

The point we have made is that, on one hand Nemec only discloses the old fashioned, heavy loop material, which applicant readily admits has been printed on for decades. When it comes to ultra-thin hook-engageable loop material, the examiner has offered absolutely no citation to prior art that shows appreciation that such material can be printed without impairing its hook engageability. On the other hand, supporting patentability, applicant has pointed out very important facts about the two references namely, Lawless and Shepard et al., cited by the Examiner for the existence of ultra-thin hook-engageable material per se.

Applicant, in the last response, presented to the examiner a careful review of each of those references and irrefutably pointed out (1) that the inventors in each case were aware of, indeed, were apparently looking for the possibilities of decorative or visual effects and (2) they completely failed to suggest what is the most common and desirable way of achieving such effects, i.e. that of printing upon the material itself. From this, and from the unusual open nature of the material itself, and its need to remain hook-engageable, Applicant draws the logical inference that the ability to so print was not obvious to these experts. This, Applicants submit, is strong evidence of the unobviousness of the ability to print and achieve desirable visual effects on a product still capable of the desired hook-engageable function.

We submit that the above quote from the Examiner's paragraph 12 was no rebuttal to our point. We submit that the revisions to the claims as well as the now-to-be submitted declaration of Inventor Shepard meet the crucial concerns raised in the advisory action dated September 26, 2002. If the Examiner has no additional position to present, the claims should be allowed.

To further buttress this position, under separate cover, Applicant Shepard explains in fact he himself did not realize that the material of the cited reference for which he was inventor was so printable at the time he made the earlier invention.

Furthermore, claim 1 as amended, is specific as to the type of nonwoven, that it entails both loops and taut fibers, further distinguishing Lawless. As Appendix A shows, the print resides on both the loops and the taut fibers to good effect. Nothing like that is shown or suggested in the references.

The Examiner has made the point that somehow we did not address the full combination of the long string of references the Examiner originally cited. We will do so now, with respect to claim 1, as amended, and claim 90:

* Of course it has been old to print on conventional loop materials using screen printing on the loop side of the materials. The cited Nemec teaches that and no more than that. But, if one tried to use screen printing on the loop side of applicant's open, ultra-thin, low lying loop fabric, following Nemec's teaching, the viscous screen print material, of the consistency normally of chocolate pudding, especially when applied to the loop side, would paste down the low-lying loops and render the material useless as a hook-engageable material.

Applicant's claims are limited to print of type formed by characteristically lower viscosity fluid, i.e. the claims are limited to the print being in the form of flexographic print, dye sublimation print, electrostatic print or ink-jet print, and thus distinguish Nemec's screen printing.

Shepard and Lawless teach ultra-thin nonwoven loop material Shepard shows loops and taut fibers. But as has been mentioned, neither of these references teaches the concept of print directly on these gossamer materials. If we take Nemec's teaching, and try, with screen printing ink, to print on the loop side of the Shepard or Lawless materials, it is clear the hook engageable functionality of the material would be lost.

It apparently, also, was not clear that any other printing could work perhaps attributable to the extreme openness of the material and as well as its needed left or 3-dimensional structure to be hook-engageable.

Claims 1 and 90 now explicitly require the portion of said second surface on which the print resides as "remaining effectively hook engageable", which accentuates this aspect of the invention (thus meeting an objection of an Advisory Action).

How are the other references of the string possibly relevant? They are not, we submit.

As pointed out in the last response, Lemelson is a hook material, not a loop material, and assuredly was not a loop material of weight less than 4 ounces per square yard. Nor was Lemelson a laminate. Printing of lines on Lemelson's relatively heavy HOOK pile, has no suggestion of the discovered printability of ultra thin nonwoven hook-engageable LOOP materials, generally, and certainly not those comprised of taut fibers as well as loops, as required by claims 1 and 90. We submit it is clear that Lemelson does not make up for the lack of Nemec, Lawless or Shepard et al.

Powell teaches painting or silk screening on cloth. As previously explained, such heavy paint or screen print goo, as applied again by Powell on the LOOP side of the claimed ultra-thin nonwoven material would mat down the loop-defining low-lying fibers or yarns and render the material non-functional. We submit it is clear Powell does not make up for the lack of Nemec, Lawless, Shepard et al, or Lemelson.

Bricker, to any extent relevant at all, only refers to conventional, heavy loop material, as explained in the prior response, and adds nothing relevant beyond the previous string of references.

Further, to reverse the order of the references in the rejection, and put Lawless first, for instance, does not make a stronger case. If we start out with Lawless as primary reference, Applicant readily admits that ultra-thin nonwoven hook-engageable materials, per se, were known. But Lawless, though looking for desirable visual effects fails to suggest printability!! Add Nemec to it and what have you got? You paint silk screen goo on Lawless and lose Lawless' hook engageability, the key functionality her material was intended to provide. And so

on. We think we have made the point sufficiently that we need not keep on showing the lack of fair teaching in these references.

We also point out that the newly cited reference US. 5, 458,590, Schleinz, et al, has to do with decorating the outside of a diaper. So far as can be seen, it has no suggestion of a fabric capable of hook engageability. The ability to print on something without hook engageability, where one does not have to be concerned about retaining the lofty hook-ability character of the web, is submitted not to make the latter obvious.

In particular, this is so regarding claims 1 and 90, so, the web construction being different, having taut fibers in the ground.

Coming now to claim 2, and claim 91, these are different from claim 1, in being limited to "super ultra thin" hook-engageable material, i.e. materials of weight less than about 2 ounces per square yard. The claims require that the graphic design or image be imprinted on the hook-engageable loop side. As with claims 1 and 90, these claims, 2 and 91, require the print to be flexographic print, a sublimable dye print, an electrostatic print deposit or an ink-jet print. (These particular claims are not limited to the stretched and stabilized composition.)

We submit strong arguments above are relevant for claims 2 and 91. We have shown that Nemec's or Powell's paint or pudding-like screen composition on the loop side of the fabric, if tried, would result in failure with the ultra thin material; with the super-ultra thin material, even more so, in the loops would just be plastered down.

For reasons given, therefore, claims 2 and 91, and claims dependent thereon, are likewise submitted to be unobvious over the cited art. The burden of proof remains on the Examiner, to show something other than inoperable combinations of references for evidencing obviousness.

Claims 87 and 92, directed to a stretched and stabilized ultra thin hook engageable material bearing one of the types of print discussed, includes the possibility of printing anywhere on the material and be useful, by being seen through the ultra-thin material.

Claim 87 is further directed to a specific laminate, with smooth paper. The arguments are further buttressed by the unique high qualities achieved by this simple but very inexpensive structure, uniquely useful for visual displays. We note neither Shepard et al nor Lawless, who were chasing economy, foresaw this superior inexpensive combination. Lawles's suggestion of film laminate is not the same. The point is that paper, of course, is much less expensive than

plastic film, on one hand, but indeed has superior properties to thin plastic films such as dimensional stability for applications such as the displays presented in the present application. Smooth paper is inherently dimensionally stable, whereas nonwovens or plastic films are far less so, and because it provides dimensional stability to the laminate, the hook-engageable laminate can be manipulated as if it were paper, and thus applied to boards, or as box linings, used as pages in a scrap book, etc., with great ease, (see drawings in this application). This is not at all the case when dealing with a relatively limp nonwoven fabric or film laminate.

The arguments we brought out in the previous response, which please see, we submit, are validated by the comments here and support these claims can be seen, certain comments regarding claims 1, 90 and 2 and 91 apply here as well.

Regarding the remaining claims, of particular moment are the substantially varied area/density claims 6, 95 and 7, 96 (inexpensive fabrics produce highly desirable appearance) and the highly dye limitation claims 11, 13, 14, 88 and 97 (dye's entering the substance of the material, are particularly favorable in maintaining hook-engageability).

Applicant has never heard of "dye silkscreen ink". Silkscreen ink is a thick pigment ink. The term "dye" is used in its common meaning to refer to soluble material, i.e. classical dyes, as we submit is clear from the specification. Dyes have been found form effective printing on such ultra-thin hook-engageable material, see Appendix A.

The remaining claims are all dependent and are submitted to be patentable, for the reason of being dependent upon allowable claims, but also for respective reasons given in the prior response, which are hereby adopted.

While this response is submitted, by itself, to strongly demonstrate patentability of the claims, the Examiner's attention is also called to the supporting declaration being separately submitted.

For the above reasons all claims are submitted to be allowable and early favorable action is solicited.

Attached is a marked-up version of the changes being made by the current amendment.

Applicant : William H. Shepard et al.
Serial No. : 09/322,663
Filed : May 28, 1999
Page : 15

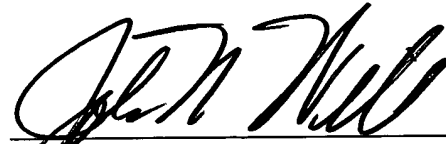
Attorney's Docket No.: 05918-133001 / VGCP 4100

Enclosed is a check for \$920 for the Petition for Extension of Time fee. Please apply any other charges or credits to Deposit Account No. 06-1050, referencing Attorney Docket No. 05918-133001.

Respectfully submitted,

Date:

Apr. 30, 2002



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Version with markings to show changes made

In the claims:

Please cancel claim 9.

Please amend claims 1-4, 6, 7, 11, 13, 14-21, 87-89 as follows:

1. (Three times amended) A laminate comprising

a substrate having at least one broad surface, and

a layer of hook-engageable non-woven material having a basis weight of less than about 4 ounces per square yard and comprising a sheet-form web body having a first surface laminated to said at least one outer broad surface of the substrate and a second surface from which hook-engageable fibers or yarns extend, said hook-engageable material comprising stretched material, stabilized in its stretched condition, in the manner that there are fibers or yarns of hook-engageable loop form on said second surface and a distribution of straightened fibers; and

a graphic design or image printed at least partially upon the second surface of said non-woven material, the print being in the form of flexographic print, dye sublimation print, electrostatic print or ink-jet print;

the print residing both on said fibers or yarns of loop form and on said straightened fibers, the fibers or yarns of loop form on which said print resides remaining effectively hook-engageable.

2. (Amended) A laminate comprising

a substrate having at least one broad surface, and

a layer of [The laminate of claim 1 wherein said] hook-engageable material having [has] a basis weight of about 2 ounces or less per square yard and comprising a sheet-form web body having a first surface laminated to said at least one outer broad surface of the substrate and a second surface from which hook-engageable fibers or yarns extend; and

a graphic design or image printed at least partially upon hook-engageable fibers or yarns of the second surface of the material, the print being in the form of flexographic print, dye

sublimation print, electrostatic print or ink-jet print, the hook-engageable fibers or yarns on which said print resides remaining effectively hook-engageable.

3. (Amended) The laminate of claim 1, 2 or 87 in which the hook-engageable material includes a binder resin anchoring the hook-engageable fibers or yarns and constituting between about 20% and 40% of the weight of the material.

4. (Twice amended) The laminate of claim [1] 2 wherein said hook-engageable material comprises a stretched material, stabilized in its stretched condition.

6. (Three times amended) The laminate of claim 1, 2 or 87 wherein the [non-woven] material has substantially varied areal density of fibers or yarns over its surface, the printed graphic design or image extending over areas of said substantially varied [fiber] areal density of said fibers or yarns.

7. (Twice amended) The laminate of claim 6 wherein said [non-woven] material comprises areas with relatively high areal density of fibers or yarns interspersed with areas with relatively low areal density of fibers or yarns, the density of fibers or yarns in areas of highest areal density being greater by a factor of at least four from the density of fibers or yarns in areas of lowest areal density, the printed graphic design or image extending over areas of highest and lowest areal density of fibers or yarns.

11. (Three times amended) The laminate of claim 1, 2 or 87 wherein said graphic design or image comprises an image printed with dye on the second side of the [non-woven] material, from which the hook-engageable fibers or yarns extend, wherein [an] a design or image visible from the surface of the [non-woven] material is comprised of light reflected by dye printing on said second surface of the [non-woven] material [and], including light reflected by dye printing on said hook-engageable fibers or yarns of said material.

13. (Twice amended) The laminate of claim [9] 1, 2 or 87 wherein said graphic design or image at least partially comprises dye print[ing residing] on said hook-engageable fibers or yarns of the [non-woven] material.

14. (Twice amended) The laminate of claim [9] 87 wherein said graphic design or image at least partially comprises dye printing residing on the second surface of the web body from which the hook-engageable fibers or yarns extend, the portion of said second surface on which said print resides remaining effectively hook-engageable.

15. (Twice amended) The laminate of claim [9] 1, 2 or 87 wherein said graphic design or image at least partially comprises printing of said form residing on said first surface of the material [web body], the [non-woven] material being at least partially transparent such that the design or image can be seen through the [non-woven] material.

16. (Twice amended) The laminate of claim [9] 1, 2 or 87 wherein said at least one outer broad surface of the substrate to which the [non-woven] material is laminated is continuous and said graphic design or image is at least partially printed on said outer broad surface of the substrate, the [non-woven] material being at least partially transparent so that the design or image can be seen through the [non-woven] material.

17. (Twice amended) The laminate of claim 1 or 2 in which said substrate comprises a smooth paper sheet.

18. (Twice amended) The laminate of claim 1 or 2 in which the substrate comprises at least a corrugated core.

19. (Twice amended) The laminate of claim 1, 2 or 87 in which the substrate comprises a smooth paper sheet side of a corrugated paperboard.

20. (Twice amended) A laminate comprising
a substrate having at least one broad surface, and
a layer of hook-engageable material having a basis weight of less than about 4
ounces per square yard and comprising a sheet-form web body having a first surface laminated to
said at least one outer broad surface of the substrate and a second surface from which hook-
engageable fibers or yarns extend, and
a graphic design or image printed at least partially upon the material, [The
laminate of claim 1 in which the] said substrate [comprises] comprising a corrugated core
laminated at its spaced apart flute regions directly to said hook-engageable material.

21. (Amended) The laminate of claim 1 or 2 wherein the substrate is selected from the
group consisting of paper, wood, synthetic foam, chipboard, wallboard, metal, plastic, and cork.

87. (Amended) A laminate comprising
a substrate having at least one broad surface, and
a layer of hook-engageable non-woven material having a basis weight of less than
about 4 ounces per square yard and comprising a sheet-form web body having a first surface
laminated to said at least one outer broad surface of the substrate and a second surface from
which hook-engageable fibers or yarns extend, said hook-engageable material comprising
stretched material, stabilized in its stretched condition, and
a graphic design or image printed at least partially upon the non-woven material,
the print being in the form of flexographic print, dye sublimation print, electrostatic print or ink-
jet print, [The laminate of claim 1 in which] said substrate [comprises] comprising smooth paper.

88. (Amended) The laminate of claim 1, 2 or 87 in which the said image is formed of
dye printed on said [non-woven] material.

89. (Amended) The laminate of claim [4] 1, 2 or 87 wherein the hook-engageable
material comprises a non-woven material stretched substantially in two directions and stabilized
in such stretched condition.

APPENDIX

TITLE: LOOP MATERIAL ON SUBSTRATES

APPLICANT: GEORGE A. PROVOST AND WILLIAM H. SHEPARD

CERTIFICATE OF MAILING BY FIRST CLASS MAIL

I hereby certify under 37 CFR §1.8(a) that this correspondence is being deposited with the United States Postal Service as first class mail with sufficient postage on the date indicated below and is addressed to the Commissioner for Patents, Washington, D.C. 20231.

December 30, 2002

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